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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/749,068	12/29/2003	Akira Minami	3408.68821	7937
7590	05/30/2007			EXAMINER
Patrick G. Burns, Esq. GREER, BURNS & CRAIN, LTD. Suite 2500 300 South Wacker Dr. Chicago, IL 60606				NGO, HUNG V
			ART UNIT	PAPER NUMBER
			2831	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/749,068	MINAMI, AKIRA	
	Examiner	Art Unit	
	Hung V. Ngo	2831	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 10 January 2007.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-7 and 9-22 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-7 and 9-22 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date _____. _____	6) <input type="checkbox"/> Other: _____

DETAILED ACTION

Claim Objections

Claim 17 is objected to because of the following informalities: “said external equipment” lacks antecedent basis. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-7, 9-22 are rejected under 35 U.S.C. 102(e) as being anticipated by Botchek (US 2004/0052045).

Re claim 1, Botchek discloses a composite storage apparatus comprising:
a disk drive (30) having first connector (one end of cable 34)(Fig 2) for a first interface (34, 44); and
a card board (32)(Fig 2) having a second connector (the other end of cable 32)(Fig 2) for the first interface and a third connector (62) for a second interface different in type of interface from the first interface,
wherein said card board further comprises: an interface conversion circuit (32)(Fig 3) for converting said second interface into said first interface and being connected to said

third connector for connecting to an outside connection using said second interface; and a memory card device (48, 50) which is connected to said interface conversion circuit (Fig 3); and

wherein a connection line (56) between the interface conversion circuit and the memory card device, for connecting to the outside connection when connecting with the outside connection using the first interface and for connecting to a disk drive having a first interface when connecting with the outside connection using the second interface (Fig 3).

Re claim 2, wherein said memory card device comprises:

a fourth connector (56) of a memory card (48, 50); and

a memory card control circuit (42) which is connected to said connector of said memory card and controls at least one of read and write of said memory card.

Re claim 4, further comprising a cable (34) for connecting the connector of said card board and the connector of said disk drive in the case of an external connection with said second interface (Fig 3).

Re claim 5, further comprising a cable (34) for connecting the connector of said card board and the first connector of said disk drive in the case of an external connection with said first interface (Fig 3).

Re claim 6, further inherently comprising setup means for setting the master/slave between said memory card and said disk drive and disposed in said card board (Fig 3).

Re claim 7, wherein said card board mounts said memory card device and said interface conversion circuit on the single side thereof (Fig 3).

Re claim 9, wherein said storage device is comprised of a removable disk drive (30)(Fig 3).

Re claim 10, wherein said disk drive (30) inherently comprises a disk drive mechanism; and a drive board on which a circuit for controlling said disk drive mechanism is mounted.

Re claim 11, wherein said first interface is a parallel interface (ATA)(abstract), and said second interface is a serial interface (62) (USB)[0081].

Re claim 12, wherein said first interface is an ATA/ATAPI interface (abstract), and said second interface is a USB interface (62)[0081] .

Re claim 13, Botchek discloses a card board (Fig 3) having a first interface (34, 44) and second interface (62), comprising:

an interface conversion circuit (32) for converting said second interface different in type of interface from said first interface into said first interface (abstract);
a first connector (one end of cable 34) (Fig 2) which is connected to said interface conversion circuit and for connecting to an outside connection using said second interface (Fig 3);

a memory card device (48, 50) which is connected to said interface conversion circuit;
and

a second connector (the other end of cable 34)(Fig 2) which is connected to a connection line between the interface conversion circuit and the memory card device

(Fig 3), for connecting to the outside connection when connecting with the outside connection using the first interface, and for connecting to a disk drive (30) having a first interface when connecting with the outside connection using the second interface.

Re claim 14, wherein said memory card device further comprises
a connector (56) of a memory card (48, 50); and
a memory card control circuit (CPU 42) which is connected to said connector of
said memory card and controls at least one of read and write of said memory card.

Re claim 15, wherein the connector of said memory card comprises a plurality of
connectors (56) which support different types of memory cards (48, 50), and said
memory card control circuit is a control circuit for controlling at least one of read and
write of said respective different types of memory cards (Fig 3).

Re claim 16, said card board are connected with a cable (62) in the case of an
external connection with said second interface (Fig 3).

Re claim 17, the disk drive and card board are connected with a cable (34) in the
case of an external connection with said first interface (Fig 3)

Re claim 18, further inherently comprising setup means for setting the:
master/slave between said memory card and an external storage device (Fig 3).

Re claim 19, wherein said card board mounts said memory card device and said
interface conversion circuit on a single face thereof (Fig 2).

Re claim 20, wherein said first interface is a parallel interface (ATA)(abstract),
and said second interface is a serial interface (62) (USB)[0081].

re claim 21, wherein said first interface is an ATA/ATAPI interface (abstract), and said second interface is a USB interface (62)[0081] .

re claim 22, wherein the second connector of said card board and a connector of a removable disk drive are connected with a cable (34) (Fig 2) in the case of an external connection with said second interface.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 4-7, 9, 10, 13, 14, 16-19, 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kiyoshi (JP 2001-022899) in view of Ryoichi (JP 2002-288964).

Kiyoshi disclose a composite storage apparatus comprising:
a disk drive (Fig 6) having a first interface (Fig 7); and
a card board (51) for the first interface and a third connector (55) for a second interface different in type of interface from the first interface,
wherein said card board further comprises: an interface conversion circuit (56) for converting said second interface into said first interface and being connected to said third connector for connecting to an outside connection using said second interface; and a memory card device (41, 42) which is connected to said interface conversion circuit (Fig 7); and

wherein a connection line (58, 59) between the interface conversion circuit and the memory card device, for connecting to the outside connection when connecting with the outside connection using the first interface,

Re claim 2, wherein said memory card device comprises:

a fourth connector (3e) of a memory card; and

a memory card control circuit (54) which is connected to said connector of said memory card and controls at least one of read and write of said memory card.

Re claim 4, further comprising a cable for connecting the connector of said card board and the connector of said storage device in the case of an external connection with said second interface (Fig 7).

Re claim 5, further comprising a cable for connecting the connector of said card board and the connector of said storage device in the case of an external connection with said first interface (Fig 7).

Re claim 6, further comprising setup means for setting the master/slave between said memory card and said storage device and disposed in said card board (Fig 7).

Re claim 7, wherein said card board mounts said memory card device and said interface conversion circuit on the single side thereof (Fig 3).

Re claim 9, wherein said storage device is comprised of a removable disk drive (Fig 5).

Re claim 10, wherein said disk drive comprises a disk drive mechanism (Fig 6); and a drive board (53) on which a circuit for controlling said disk drive mechanism is mounted.

Re claim 13, Kiyoshi disclose a card board (51) having first interface (interconnection between disk drive unit 53 and conversion circuit 56, Fig 7) and second interface (55), comprising: an interface conversion circuit (56) for converting said second interface different in type of interface from said first interface into said first interface (Fig 7);

a memory card device (41, 42) being connected to said interface conversion circuit; and a connection line (59, 58) between the interface conversion circuit and the memory card device, for connecting to the outside connection when connecting with the outside connection using the first interface, and for connecting to a disk drive having a first interface when connecting with the outside connection using the second interface.

Re claim 14, wherein said memory card device further comprises a connector (3e) of a memory card; and a memory card control circuit (54) which is connected to said connector of said memory card and controls at least one of read and write of said memory card .

Re claim 16, said card board are connected with a cable in the case of an external connection with said second interface (Fig 7).

Re claim 17, the disk drive and card board are connected with a cable in the case of an external connection with said first interface (Fig 7)

Re claim 18, further comprising setup means for setting the: master/slave between said memory card and an external storage device (Fig 7).

Re claim 19, wherein said card board mounts said memory card device and said interface conversion circuit on a single face thereof (Fig 2).

Re claim 22, wherein the connector of said card board and a connector of a removable storage device are connected with a cable in the case of an external connection with said second interface (Fig 7).

The teaching as discussed above does not disclose first and second connectors for the first interface (re claims 1, 13).

Ryoichi teach the use of disclose first and second connectors (8) for a first interface (Fig 1b). It would have been obvious to one of ordinary skill in the art at the time the invention was made for the purpose of forming an interchangeable drive.

Response to Arguments

Applicant's arguments with respect to claims 1, 13 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung V. Ngo whose telephone number is (571) 272-1979. The examiner can normally be reached on Monday to Thursday 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean A. Reichard can be reached on (571) 272-2800 EXT 31. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HVN
05-22-07

Hung V. Ngo

HUNG V. NGO
PRIMARY EXAMINER